

# **Section 9**

## **Occupant Protection, 2000**

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### **Note:**

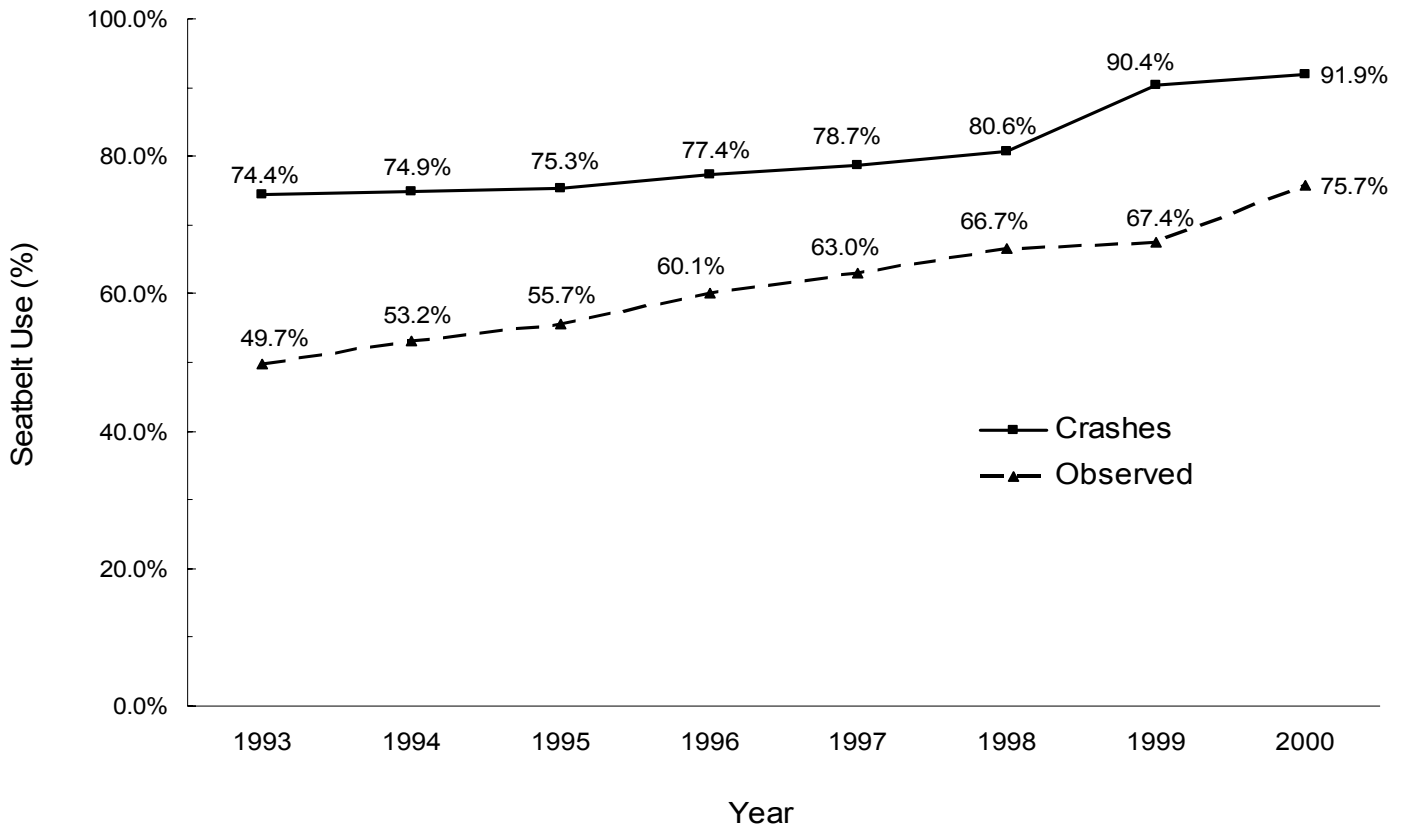
Seatbelt Use - Seatbelt use is reported for occupants in a passenger car, a light truck or van. Occupants are coded as wearing a seatbelt if they reported using a shoulder/lap belt, lap belt or a child safety seat (occupants using only a shoulder strap were reported to be unbelted) at the scene of the crash. In the majority of cases, seatbelt use as recorded by the investigating officer is self-reported by the crash occupant. It is possible that crash occupants may report using a seatbelt when they were not in order to avoid a citation or fine, thus over-inflating the seatbelt use rate. In the case of fatal or severe injury crashes the officer will determine the seatbelt use.

Observational Study - Each year the Utah Department of Public Safety's Highway Safety Office conducts a seatbelt usage observational study. Study sites are located throughout the state where trained observers can record seatbelt use for drivers and front seat passengers of slow moving or stopped vehicles. According to the 2000 study, 75.7% of Utah's drivers and front seat passengers were buckled up and 79.4% of children under the age of 10 years were restrained while riding in a motor vehicle.

# Occupant Protection 1993-2000

Figure 9.01 compares the percentage of seatbelt use reported in crashes to observational studies for drivers and front seat passengers. Seatbelt use by drivers and front-seat passengers has increased each year in both crashes and observational studies. The difference between crash seatbelt use rates reported by crash participants or the investigating officer at the crash scene, and observed seatbelt use rates, may be due to over-reporting of seatbelt use by crash participants at the scene of a crash.

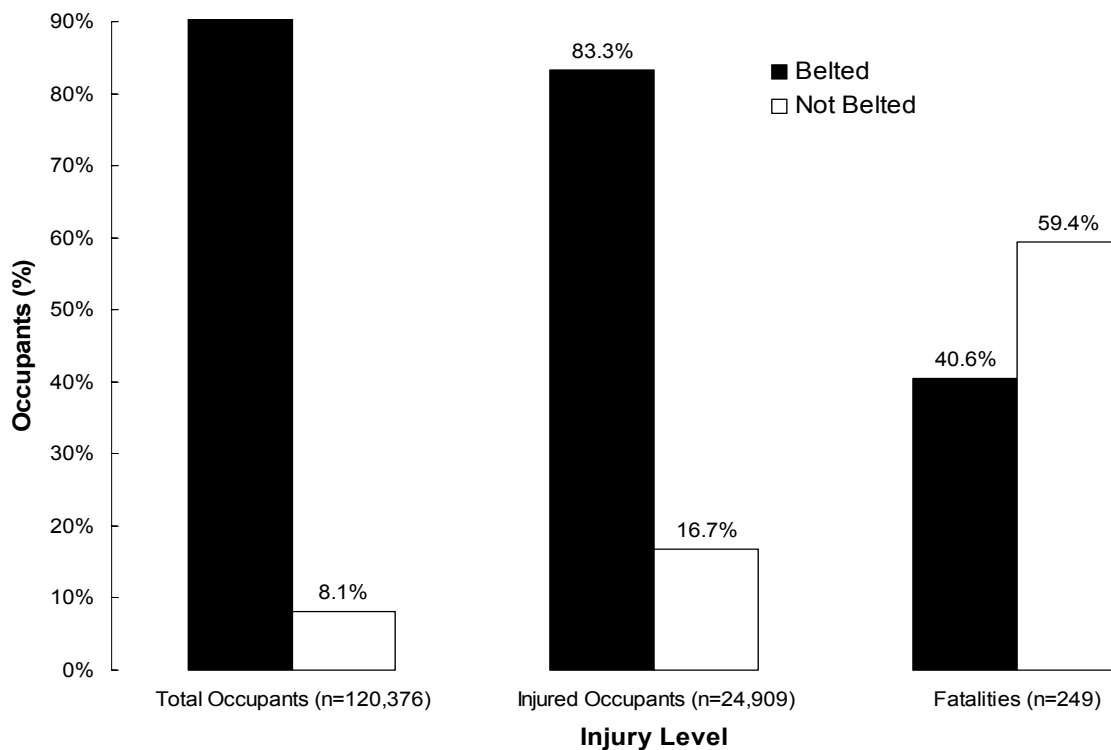
Figure 9.01 Percentage of Drivers and Front Seat Passengers Wearing Seatbelts in Crashes and Observational Studies, Utah 1993 - 2000



# Seatbelt Use

Statewide seatbelt use for all crash occupants (including back seat occupants) as reported to crash investigating officers is shown in Figure 9.02. The majority (91.9%) of occupants involved in a crash and the majority (83.3%) of the injured occupants reported using a seatbelt. Only slightly more than one-third (40.6%) of the fatally injured occupants were belted. Seatbelts are an important safety feature; occupants who were not wearing a seatbelt were 12 times more likely to sustain a fatal injury than occupants who were wearing a seatbelt.

Figure 9.02 Seatbelt Use by Total Occupants, Injured Occupants, and Fatalities, Utah 2000



# Seatbelt Use by Age and County

Table 9.01 shows the self-reported seatbelt use of occupants by age and county. Davis County had the highest percentage of seatbelt use (95.1%), while Sanpete had the lowest percentage of seatbelt use (73.5%).

Table 9.01 Seatbelt Use by Age and County, Utah 2000

County	Seatbelt Use	Age Group														Total	Percent
		00 - 04	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 +	Unknown			
Beaver	Belted	29	19	8	56	77	35	51	43	27	23	15	3	9	395	84.0%	
	Unbelted	3	7	9	26	10	3	6	1	5	0	2	0	3	75	16.0%	
Box Elder	Belted	64	54	54	354	216	117	179	201	93	75	55	29	26	1,517	85.7%	
	Unbelted	2	9	19	78	39	15	44	23	7	5	6	2	5	254	14.3%	
Cache	Belted	202	120	146	1,110	820	408	518	443	236	149	105	57	37	4,351	88.9%	
	Unbelted	9	10	32	164	147	43	50	34	21	12	7	9	5	543	11.1%	
Carbon	Belted	29	22	27	155	82	61	83	88	53	37	20	11	16	684	88.7%	
	Unbelted	0	2	4	25	12	9	7	9	8	3	4	1	3	87	11.3%	
Daggett	Belted	1	2	4	9	11	5	7	11	7	2	4	0	1	64	86.5%	
	Unbelted	3	0	1	3	0	2	1	0	0	0	0	0	0	10	13.5%	
Davis	Belted	529	398	427	2,758	1,568	952	1,387	1,264	738	428	276	103	141	10,969	95.1%	
	Unbelted	11	19	21	212	102	49	60	50	11	17	8	3	4	567	4.9%	
Duchesne	Belted	23	21	18	88	45	34	62	39	43	22	19	5	11	430	78.3%	
	Unbelted	1	8	8	40	20	9	11	11	5	1	1	1	3	119	21.7%	
Emery	Belted	14	24	11	99	51	25	52	67	29	23	13	4	10	422	80.8%	
	Unbelted	7	5	4	33	14	9	11	8	3	1	1	1	3	100	19.2%	
Garfield	Belted	2	17	22	20	30	21	32	40	25	20	8	4	7	248	82.9%	
	Unbelted	2	2	5	22	7	5	3	1	2	0	0	1	1	51	17.1%	
Grand	Belted	12	13	12	50	61	39	49	47	29	17	10	5	5	349	86.2%	
	Unbelted	1	0	0	12	12	5	12	5	2	4	3	0	0	56	13.8%	
Iron	Belted	91	71	76	322	287	148	194	159	114	57	51	19	19	1,608	83.5%	
	Unbelted	5	13	23	89	80	26	32	25	11	4	4	4	2	318	16.5%	
Juab	Belted	32	23	29	79	65	42	56	52	50	22	11	5	3	469	82.6%	
	Unbelted	4	7	4	24	12	17	12	7	6	1	0	1	4	99	17.4%	
Kane	Belted	16	10	10	70	44	17	27	21	25	20	10	3	1	274	79.9%	
	Unbelted	2	1	4	20	10	5	7	6	6	7	1	0	0	69	20.1%	
Millard	Belted	35	22	37	143	98	59	86	86	70	42	24	6	2	710	87.5%	
	Unbelted	6	4	2	32	16	10	14	9	4	1	2	1	0	101	12.5%	

Table 9.01 Seatbelt Use by Age and County, Utah 2000 (continued)

County	Seatbelt Use	Age Group												Total	Percent
		00 - 04	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 +		
Morgan	Belted	7	7	3	64	28	17	27	31	14	9	6	1	214	87.7%
	Unbelted	0	0	2	11	6	1	2	2	2	3	0	1	30	12.3%
Piute	Belted	4	2	1	4	6	5	4	10	6	3	8	0	54	87.1%
	Unbelted	0	0	0	5	0	0	0	0	0	0	0	0	8	12.9%
Rich	Belted	3	10	8	26	5	4	20	15	10	2	3	3	119	90.2%
	Unbelted	0	0	2	5	2	2	0	1	0	1	0	0	13	9.8%
Salt Lake	Belted	2,317	1,654	1,547	10,247	8,126	5,404	7,856	6,302	3,620	1,697	1,169	456	51,121	93.5%
	Unbelted	77	117	160	967	678	355	480	319	166	78	54	27	3,543	6.5%
San Juan	Belted	14	13	13	48	54	46	71	52	44	23	11	6	413	79.9%
	Unbelted	1	4	12	23	17	15	15	7	2	0	2	1	104	20.1%
Sanpete	Belted	17	24	26	114	75	41	83	52	34	21	14	5	510	73.5%
	Unbelted	3	8	13	63	28	12	24	13	4	5	7	4	184	26.5%
Sevier	Belted	44	27	32	160	118	75	99	94	79	47	38	12	849	85.5%
	Unbelted	2	0	9	60	25	8	11	5	9	4	5	3	144	14.5%
Summit	Belted	36	32	47	271	184	151	234	232	105	43	21	8	1,393	92.2%
	Unbelted	0	0	3	27	20	13	22	18	6	4	2	2	118	7.8%
Tooele	Belted	57	40	31	211	141	110	195	119	90	36	26	9	1,099	87.0%
	Unbelted	1	4	6	41	28	21	22	24	9	4	3	1	164	13.0%
Uintah	Belted	29	36	27	237	103	58	114	84	41	26	29	16	820	85.5%
	Unbelted	2	1	4	61	34	8	12	10	3	1	1	1	139	14.5%
Utah	Belted	903	597	511	3,742	3,745	1,812	2,153	1,649	1,000	564	397	160	17,487	91.9%
	Unbelted	29	43	52	529	358	144	158	89	52	30	21	16	1,546	8.1%
Wasatch	Belted	35	32	42	142	105	72	111	105	58	39	26	8	793	88.8%
	Unbelted	1	3	6	34	24	16	8	5	2	1	0	0	100	11.2%
Washington	Belted	194	127	134	858	430	257	356	345	249	202	173	102	3,496	88.9%
	Unbelted	9	12	28	167	60	43	34	27	18	15	12	6	437	11.1%
Wayne	Belted	6	3	7	17	16	10	19	25	5	14	3	0	127	83.6%
	Unbelted	1	3	0	5	3	2	5	1	1	2	2	0	25	16.4%
Weber	Belted	383	291	284	2,135	1,489	921	1,332	1,125	651	394	346	136	9,632	92.7%
	Unbelted	9	21	28	217	149	78	99	82	27	22	12	5	755	7.3%
Statewide	Belted	5,128	3,711	3,594	23,589	18,080	10,946	15,457	12,801	7,545	4,057	2,891	1,176	110,617	91.9%
	Unbelted	191	303	461	2,995	1,913	925	1,162	792	392	226	160	91	9,759	8.1%

# Seatbelt Use

## by Gender, Age and Occupant Placement

Female and male crash occupants reported similar seatbelt use (approximately 90%). For injured occupants and fatally injured occupants, the reported seatbelt use was greater for females than males. However, the reported seatbelt use for fatalities was almost half of that for total crash occupants regardless of gender (Table 9.02).

Table 9.02 Seatbelt Use by Gender, Utah 2000

Gender	Seatbelt Status	Total Occupants		Injured Occupants		Fatalities	
		#	%	#	%	#	%
Female	Belted	52,149	92.9%	12,123	85.7%	43	42.6%
	Unbelted	4,012	7.1%	2,026	14.3%	58	57.4%
Male	Belted	58,383	91.0%	8,607	80.1%	58	39.2%
	Unbelted	5,743	9.0%	2,141	19.9%	90	60.8%
Total	Belted	110,532	91.9%	20,730	83.3%	101	40.6%
	Unbelted	9,755	8.1%	4,167	16.7%	148	59.4%
Grand Total		120,287	100.0%	24,897	100.0%	249	100.0%

Reported seatbelt use did not vary substantially by seating location (Table 9.03). Among total, injured, and fatally injured occupants, drivers reported the highest seatbelt use compared to other seating locations.

Table 9.03 Seatbelt Use by Occupant Placement, Utah 2000

Placement	Seatbelt Status	Total Occupants		Injured Occupants		Fatalities	
		#	%	#	%	#	%
Driver	Belted	75,899	93.1%	13,925	86.0%	66	45.5%
	Unbelted	5,657	6.9%	2,265	14.0%	79	54.5%
Front Seat Passenger	Belted	20,266	89.2%	4,634	79.2%	27	39.7%
	Unbelted	2,464	10.8%	1,217	20.8%	41	60.3%
Back Seat Passenger	Belted	14,452	89.8%	2,180	76.0%	8	22.2%
	Unbelted	1,638	10.2%	688	24.0%	28	77.8%
Total Belted		110,617	91.9%	20,739	83.3%	101	40.6%
Total Unbelted		9,759	8.1%	4,170	16.7%	148	59.4%
Grand Total		120,376	100.0%	24,909	100.0%	249	100.0%

Seatbelt use varied slightly by age (Table 9.04). For total occupants, children under the age of 5 years had the highest rate of reported seatbelt use (96.4%), whereas, the age group 10 to 14 years and teenagers aged 15 to 19 years reported the lowest percentage of seatbelt use (88.6% and 88.7%). Among injured occupants, the age group 70 to 74 years reported the highest seatbelt use and those aged 10 to 14 years reported the lowest. For fatally injured occupants, the age group 60 to 64 years reported to have the highest seatbelt use and those aged 10 to 14 years the lowest.

Although the reported seatbelt or child safety seat use rate for children under the age of 10 years was often one of the highest for all age groups, it does not indicate that children were properly restrained. Unfortunately, several statewide surveys have found that child safety seats are often placed incorrectly in vehicles. In addition, young children are often moved to adult sized seatbelts prematurely when a booster seat is more appropriate. (see page 9.11 for Safety Recommendations).

Table 9.04 Seatbelt Use by Age Group, Utah 2000

Age Category	Total Occupants		Injured Occupants		Fatalities	
	Total	% Belted	Total	% Belted	Total	% Belted
00 - 04	5,319	96.4%	616	89.4%	8	37.5%
05 - 09	4,014	92.5%	755	84.2%	3	33.3%
10 - 14	4,055	88.6%	882	75.1%	3	0.0%
15 - 19	26,584	88.7%	5,273	75.7%	37	24.3%
20 - 24	19,993	90.4%	4,144	80.6%	48	35.4%
25 - 29	11,871	92.2%	2,520	83.9%	21	42.9%
30 - 34	8,695	92.8%	1,914	84.5%	15	33.3%
35 - 39	7,924	93.2%	1,690	87.1%	19	57.9%
40 - 44	7,413	93.9%	1,513	86.7%	13	53.8%
45 - 49	6,180	94.5%	1,410	90.2%	10	30.0%
50 - 54	4,599	94.8%	1,062	90.3%	14	28.6%
55 - 59	3,338	95.4%	762	92.0%	11	63.6%
60 - 64	2,377	94.2%	564	89.2%	6	83.3%
65 - 69	1,906	95.4%	421	92.9%	6	50.0%
70 - 74	1,690	94.9%	418	93.3%	8	50.0%
75 - 79	1,361	94.6%	295	90.2%	7	28.6%
80 - 84	826	94.6%	198	87.4%	7	71.4%
85 +	441	89.6%	116	83.6%	12	50.0%
Missing	1,790	91.7%	356	81.5%	1	0.0%
Grand Total	120,376	91.9%	24,909	83.3%	249	40.6%

# Children and Restraint Use

The proportion of children under the age of 9 years who were reported as unbelted increased with increasing age (Table 9.05) The majority of children under the age of 2 years (84.3%) were in child safety seats at the time of the crash, compared to 53.8% of children aged 2 to 4 years. Children under the age of 2 years were 5 times more likely to be in a child safety seat than children between the ages of 2 to 4 years. The majority (93.1%) of children between the ages 5 to 8 years were belted or in a child safety seat. Child safety seat usage was highest for children in the back seat; children in the back seat were 4 times more likely to be in a child safety seat than children in the front seat.

Utah's Child Restraint Law requires all children under the age of 19 years to be properly restrained when riding in a motor vehicle. In addition, children age 4 years and under must be restrained in a child safety seat (see page 9.11 for Safety Laws and Recommendations).

Table 9.05 Seating Location and Restraint Status for Children Under Age 9 Years, Utah 2000

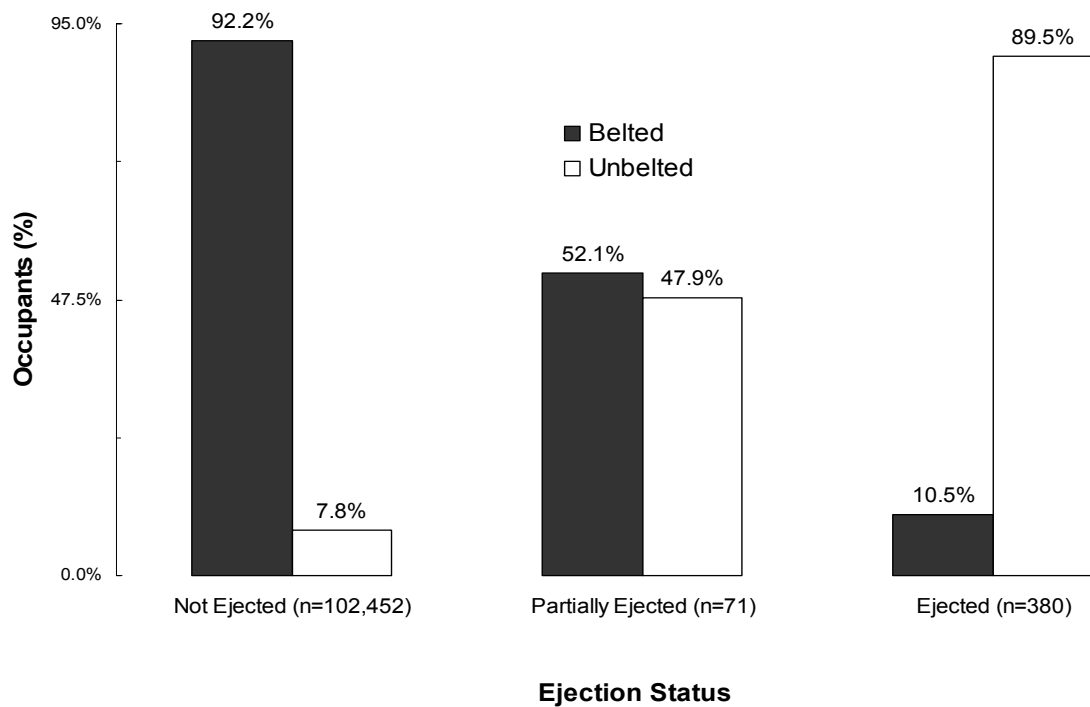
Seating Location Seatbelt Status		Ages 0 - 1		Ages 2 - 4		Ages 5 - 8		Total
		#	%	#	%	#	%	
Front Middle	Child Safety Seat	40	69.0%	26	24.3%	2	1.6%	68
	Other Belted	11	19.0%	62	57.9%	105	84.7%	178
	Unbelted	7	12.1%	19	17.8%	17	13.7%	43
Front Right	Child Safety Seat	99	81.1%	100	30.0%	19	2.9%	218
	Other Belted	19	15.6%	207	62.2%	574	88.3%	800
	Unbelted	4	3.3%	26	7.8%	57	8.8%	87
Back Seat	Child Safety Seat	1,564	85.0%	1,642	57.7%	216	8.7%	3,422
	Other Belted	243	13.2%	1,091	38.3%	2,108	85.1%	3,442
	Unbelted	33	1.8%	115	4.0%	152	6.1%	300
Total	Child Safety Seat	1,703	84.3%	1,768	53.8%	237	7.3%	3,708
	Other Belted	273	13.5%	1,360	41.4%	2,787	85.8%	4,420
	Unbelted	44	2.2%	160	4.9%	226	7.0%	430
Grand Total		2,020	100.0%	3,288	100.0%	3,250	100.0%	8,558



# Ejection by Seatbelt Use

Figure 9.03 shows an inverse relationship between ejection from a motor vehicle and seatbelt use. The majority (89.5%) of the occupants ejected from a motor vehicle were not reported to be using a seatbelt, compared to only 7.8% of occupants not ejected from a motor vehicle.

Figure 9.03 Ejection by Seatbelt Use, Utah 2000



# Air Bags

Table 9.06 shows the age of occupants whose air bag deployed and the percentage belted. A majority of total and injured occupants whose air bag deployed were wearing a seatbelt. However, only 40.9% of fatalities whose air bag deployed were wearing a seatbelt.

Table 9.06 Percentage of Seatbelt Use for Occupants Whose Air Bag Deployed, Utah 2000

Age Category	Total Occupants		Injured Occupants		Fatalities	
	Total	% Belted	Total	% Belted	Total	% Belted
00 - 04	22	90.9%	6	83.3%	0	0.0%
05 - 09	17	88.2%	10	100.0%	1	0.0%
10 - 14	29	79.3%	20	75.0%	0	0.0%
15 - 19	389	83.0%	247	79.8%	2	0.0%
20 - 24	379	85.0%	230	83.5%	2	100.0%
25 - 29	207	87.0%	132	84.8%	2	0.0%
30 - 34	130	84.6%	95	83.2%	3	33.3%
35 - 39	129	85.3%	81	86.4%	2	50.0%
40 - 44	103	95.1%	64	96.9%	1	100.0%
45 - 49	104	88.5%	69	91.3%	2	0.0%
50 - 54	70	88.6%	47	83.0%	2	100.0%
55 - 59	71	93.0%	46	91.3%	2	50.0%
60 - 64	39	92.3%	32	93.8%	0	0.0%
65 - 69	37	91.9%	26	88.5%	0	0.0%
70 - 74	37	91.9%	28	89.3%	0	0.0%
75 - 79	39	89.7%	29	89.7%	1	0.0%
80 - 84	23	78.3%	18	83.3%	2	50.0%
85 +	6	66.7%	4	75.0%	0	0.0%
Missing	21	81.0%	14	71.4%	0	0.0%
Grand Total	1,852	86.3%	1,198	85.0%	22	40.9%

# **Safety Restraint Laws And Recommendations**

## **Safety Restraint Use Law**

Utah law requires all motor vehicle occupants to be wearing a seatbelt when traveling in a motor vehicle. The purpose of this law is to protect Utahns from needless death and injury and reduce taxpayer costs resulting from traffic collisions. The law is a secondary law which means a person may be issued a citation only when the police officer has stopped the vehicle for another reason. Any person who violates this law is subject to a fine of \$45, reduced to \$15 upon completion of a traffic safety educational class. Exceptions to the law include, delivery personnel, rural letter carriers, persons driving vehicles used for farm purposes, individuals in motor vehicles manufactured before July 1, 1966, and individuals with physically disabling or medical condition which would prevent appropriate use of a safety belt. Visitors from outside Utah are also required to wear a seatbelt when traveling in Utah. The law is primary for drivers and passengers under age 19 years. Children age 4 years and under must ride in an approved child safety seat and children aged 5 to 19 years must ride in an approved child safety seat or seatbelt. This is a primary law which means a law enforcement officer can stop a vehicle if he/she notices children are not properly restrained. A fine can be issued solely for not restraining a child under the age of 19 years and violators will be subject to a fine of not more than \$45. The first offense shall be dismissed if the driver shows proof of acquiring a child safety seat or seatbelt. The driver is responsible for unrestrained occupants in the vehicle under the age of 16, whether or not they are the parents of the unrestrained child.

## **Child Safety Seat Recommendations**

- Infants should be placed in a rear facing child safety seat until they are at least 20 pounds AND 1 year of age.
- Children over 1 year of age weighing 20 - 40 pounds should ride in forward facing child safety seats.
- Older children (approximately 4-8 years of age) should ride in belt-positioning booster seats until they are approximately 80 pounds and can use an adult-size lap and shoulder belt system.
- Avoid using secondhand child safety seats especially if it does not have the original instruction booklet, if it has been used in a crash, if it does not have the manufacturer's date and model number on it or if it is more than six years old.
- If your car has lap/shoulder combination belts, it could be critical to use a locking clip to properly secure your safety seat to the car. Consult the vehicle owner's manual.
- The safest place for any child age 12 and under is in the back seat of the vehicle.
- Children should never be held on an adult's lap. The force of the collision would tear a child from the adult's arms. If the adult is not wearing a safety belt, the child could be crushed between the adult's body and the dashboard.

## **Seatbelt Recommendations**

- Always use both the lap and shoulder belt. When worn properly, the shoulder belt should fit across the collar bone and the lap belt should fit low over the hips.
- Never place the shoulder strap under your arm or behind your back.
- Use belt-positioning booster seats for children who have outgrown their toddler safety seat (at about 4 years of age and 40 pounds). Booster seats help position an adult-size seatbelt for a safer fit on children.

## **Air Bag Safety Recommendations**

- NEVER place a rear facing child safety seat in the front seat of a vehicle with a passenger side air bag.
- Place children age 12 years and younger in the back seat in an age and size-appropriate child safety seat or seatbelt.
- If you are the driver, keep 10 - 12 inches between you and the steering wheel.
- Move the front passenger seat as far back as possible.
- Shorter drivers, who cannot get 10 inches from the steering wheel and still comfortably reach the pedals can purchase pedal extender (call (813) 932-8566 for more information).
- Air bags are "supplemental" to seatbelts. Be sure you and your passengers use both the lap and shoulder portion of the seatbelt and children ride in appropriate child safety restraints in the back seat.
- If you MUST disconnect your vehicle's air bag contact Utah Highway Safety at (801) 293 -2480 or log onto the National Highway Traffic Safety Administration website at <http://www/nhtsa.dot.gov> for information.